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(54) INTERNET CONNECTION SYSTEM AND ITS METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an Internet connection system and method for allowing a user to reduce any personal computer setting work, and for allowing a provider to simplify the maintenance work of access point information and to control congestion of access points.

SOLUTION: A service center having a data base for realizing the unitary management of the access point information and protocol information of each provider and a means for notifying a user of the information is arranged in a public network. Moreover, this system is provided with a means for allowing a provider side to change data on the data base in the service center.

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**CLAIMS**

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[Claim(s)]

[Claim 1] In the Internet connectivity system connected to the Internet via the provider chosen as arbitration based on the demand from the personal computer connected to the public network The database which carries out unitary management of access point and protocol information of each provider stationed on a public network, The identifier of said means to connect between said databases with a personal computer, and the provider notified from said personal computer, and a means by which said database searches an applicable provider's access point and protocol information based on the dispatch telephone number of said personal computer, A means to notify said applicable provider's access point and protocol information to said personal computer, and said personal computer are an Internet connectivity system characterized by having a means to access the Internet using said access point and protocol information which were notified.

[Claim 2] It is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which sets up the identifier of the provider who

connects from a personal computer, The 2nd step which connects with said database on a public network from said personal computer, The 3rd step which searches an applicable provider's access point and protocol information with said database with the dispatch telephone number of said provider identifier and said personal computer, The Internet connectivity approach characterized by consisting of the 4th step which notifies said retrieval result to said personal computer, and the 5th step which connects said advice to a carrier beam relevance provider.

[Claim 3] It is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which connects with said database via a public network from a provider, The Internet connectivity approach characterized by consisting of the 2nd step which performs the updating request of an access point and protocol information at said database, and the 3rd step which performs renewal of said access point and protocol information in said database from said provider.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the Internet connectivity system and approach of having used the telephone line, arranges the service center which has the database which carries out unitary management of the access point information and protocol information for every provider especially, and a means to notify a user of such information at a public network, and relates to the Internet connectivity system and approach of having enabled it to change further the data on the database which is in a service center from a provider side.

[0002]

[Description of the Prior Art] Although various kinds of setting out is required for the software carried in a personal computer in the Internet connectivity using a personal computer, since setting out is complicated, there is a problem that setting out is difficult, by the beginner of a personal computer. Moreover, although it needed to connect with the access point which exchanges the providers and the agreements of offering service and a provider specifies in the Internet connectivity, various setting out mentioned above when having contracted to the case where a provider is changed, or two or more providers needed to be redone, and there was a problem that the convenience of the Internet was checked.

[0003] On the other hand, although the provider who offers service is applying to the every place region by installing an access point It sets to the activity of duplication of an access point, dislodging, a halt, etc. for the problem solving on employment. The trouble that the announcement to a user from quite before activity initiation is required, and cannot work immediately at the time of problem generating, Although the nearby access point was vacant when the Internet utilization of a user concentrated and the congestion of an access point occurred, there was a problem that the re-connection had to be left to a user.

[0004] Drawing 16 is the explanatory view of the Internet connectivity procedure by the conventional technique. It sets to this drawing and is 11. The ordinary homes A and 12 The ordinary homes B, 21, and 22 The personal computer at each ordinary homes A and B and 3 are a public network and 41. Provider A and 42 Provider B and 51 52 Each providers' A and B server, 61, and 62 Each provider A, the access point corresponding to B, and 7 show the Internet.

[0005] Drawing 17 is the basic flow chart of drawing 16 .

[0006] Henceforth, along with the sign of drawing 16 and drawing 17 , the Internet connectivity procedure by the conventional technique is explained.

[0007] S1. ordinary homes A11 Or ordinary homes B12 Each user is the personal computer 21 which it has in each, and 22. In case an Internet connectivity is carried out, it is this personal computer 21 and 22. Provider A41 who operates it and connects with the software for Internet connectivities Or provider B42 Each access point 61 Or 62 Various information, such as the telephone number and TCP/IP control information, is set up.

[0008] S2. personal computer 21 Or 22 It goes via the public network 3 of the telephone line, and he is a provider A41. Or provider B42 Server 51 Or server 52 It connects.

[0009] S3. server 51 Or server 52 User authentication is carried out with user ID/password.

[0010] S4. server 51 Or 52 The Internet 7 is accessed after user authentication.

[0011] S5. personal computer 21 Or personal computer 22 Provider A41 Or provider B42 It goes and the Internet 7 is used.

[0012] In the Internet connectivity procedure by the above conventional technique, when a user used the Internet, the user set a provider's access point (telephone number) and the protocol to be used, protocol detailed information, etc. as the software for Internet connectivities carried in a personal computer, and was carrying out the Internet connectivity.

[0013] However, in the beginner of a personal computer, many information which cannot be understood is included and these had the problem that an Internet connectivity was easily impossible.

[0014] On the other hand, since it corresponded to employment activities, such as congestion of an access point, the trouble of obsolescence and transfer, and a maintenance, duplication of an access point, dislodging, a halt, etc. were required, but in working, the provider needed the prior announcement to a user, and after the announcement permeated, he was working.

Moreover, a certain access point carried out congestion by utilization concentration, and although another access point was vacant under the situation that the Internet connectivity of the user cannot be carried out, the activity of a vacant access point needed to be left to setting-out modification of a user.

[0015]

[Problem(s) to be Solved by the Invention] In the case of the conventional Internet connectivity procedure shown above, the problem of \*\* which complicated setting out is required of a user side in order to access the Internet, the maintenance service of the access point by the provider cannot carry out immediately, and cannot control congestion of an access point by the provider side was produced.

[0016] This invention solves the above-mentioned conventional trouble, and offers the following Internet connectivity systems and approaches. That is, let it be a technical problem to offer the Internet connectivity system and approach which can perform control of an access point in a provider side at the time of congestion generating of the Internet connectivity system which can simplify the maintenance of the Internet connectivity system which can carry out [ \*\*\*\* ]-izing of a user's personal computer setting-out activity and an approach, and the access point information by (2) providers and an approach, and (3) access points in (1) Internet connectivity.

[0017]

[Means for Solving the Problem] In the Internet connectivity system which connects the 1st invention for making the above-mentioned technical problem solved to the Internet via the provider chosen as arbitration based on the demand from the personal computer connected to the public network The database which carries out unitary management of access point and protocol information of each provider stationed on a public network, The identifier of said means to connect between said databases with a personal computer, and the provider notified from said personal computer, and a means by which said database searches an applicable provider's access point and protocol information based on the dispatch telephone number of said personal computer, A means to notify said applicable provider's access point and protocol information to said personal computer, and said personal computer are equipped with a means to access the Internet using said access point and protocol information which were notified.

[0018] According to this 1st invention, the Internet connectivity system which can carry out [ \*\*\*\* ]-izing of a user's personal computer setting-out activity can be offered.

[0019] The 2nd invention is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which sets up the identifier of the provider who connects from a personal computer, The 2nd step which connects with said

database on a public network from said personal computer, The 3rd step which searches an applicable provider's access point and protocol information with said database with the dispatch telephone number of said provider identifier and said personal computer, It consists of the 4th step which notifies said retrieval result to said personal computer, and the 5th step which connects said advice to a carrier beam relevance provider.

[0020] According to this 2nd invention, the Internet connectivity approach which can carry out [\*\*\*\*]-izing of a user's personal computer setting-out activity can be offered.

[0021] The 3rd invention is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which connects with said database via a public network from a provider, It consists of the 3rd step which performs renewal of said access point and protocol information in said database from said provider in the 2nd step which performs the updating request of an access point and protocol information, and said database.

[0022] According to this 3rd invention, while being able to simplify the maintenance of the access point information by the provider, and protocol information, the Internet connectivity approach in which modification control of an access point is possible can be offered in a provider side at the time of congestion generating of an access point.

[0023]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained, referring to drawing.

[0024] In addition, in order to make an understanding easy through a complete diagram, the same sign shall be similarly attached and shown in a part.

[0025] Drawing 1 is Internet connectivity structure-of-a-system drawing in 1 operation gestalt of this invention 1st. this drawing -- setting -- 1 -- a user and 2 -- a user's 1 personal computer, and 3 -- a public network and 4 -- a provider and 5 -- in a provider's 4 server, and 6, a service center and 9 show the server of a service center 8, and, as for the access point to a provider 4, and 7, 10 shows the access point to a service center 8, as for the Internet and 8.

[0026] In this invention, the service center 8 which carries out the centralized control of the telephone number of the access point for every provider and the protocol information (naming generically below access point information) to a public network 3 is arranged, and an Internet connectivity is performed by notifying a user 1 of a provider's 4 access point information from this service center 8.

[0027] Moreover, the telephone number of a service center 8 is the only number in Japan or the world, it shall be at the shipment event and the telephone number of a service center shall be written in the personal computer 2. (Rewriting of the access point information by the user 1 is also possible.)

In this invention, the information which a user 1 sets as a personal computer 2 for an Internet connectivity serves as only a provider identifier to the provider 4 whom the user 1 has joined.

[0028] Drawing 2 is the explanatory view of the Internet connectivity procedure in 1 operation gestalt of this invention 2nd. In this drawing, the same sign as drawing 1 omits the explanation in order to show the same content.

[0029] Drawing 3 is the basic flow chart of drawing 2.

[0030] Henceforth, along with the sign of drawing 2 and drawing 3, the Internet connectivity procedure in 1 operation gestalt of this invention 2nd is explained.

[0031] In case the S11. user 1 carries out an Internet connectivity, he sets up the identifier of the provider 4 linked to the Internet connectivity software on a personal computer 2. In addition, the access point 10 beforehand connected to a service center 8 is set to the personal computer 2 fixed.

[0032] The S12. personal computer 2 is connected via a public network 3 by the access point 10 to the service center 8 currently held on the personal computer 2. Under the present circumstances, a provider identifier is notified to a service center 8 from a personal computer 2.

[0033] If the S13. service center 8 has the connection from a user 1, it will search the applicable provider's 4 access point from the generation of electrical energy number of a provider identifier and a user 1 notified by the user 1.

[0034] The S14. service center 8 notifies a user 1 of the access point information of the provider 4 who referred to the above-mentioned step (S13).

[0035] The S15. personal computer 2 sets the access point information notified from the service center 8 as Internet connectivity software, and connects it to the applicable provider's 4 access point 6.

[0036] The S16. personal computer 2 is connected to a provider 4 via a public network 3. Under the present circumstances, user ID and a password are notified from a personal computer 2.

[0037] If the S17. provider 4 has the connection from a user 1, he will perform authentication processing with the user ID and the password which were notified by the user 1.

[0038] If the S18. provider 4 has the normal result attested at the above-mentioned step (S17), he will connect the applicable user 1 to the Internet 7.

[0039] The user 1 of the S19. personal computer 2 uses the Internet 7 via a provider 4.

[0040] An Internet connectivity is realized by notifying a user 1 of a provider's 4 access point information from a service center 8 as mentioned above.

[0041] Drawing 4 is the explanatory view of the provider maintenance procedure in 1 operation gestalt of this invention 3rd. In this drawing, the same sign as drawing 1 omits the explanation in order to show the same content.

[0042] Drawing 5 is the basic flow chart of drawing 4 .

[0043] Henceforth, along with the sign of drawing 4 and drawing 5 , the provider maintenance procedure in 1 operation gestalt of this invention is explained.

[0044] The S21. provider's 4 maintenance man connects with the server 9 of a service center 8 via a public network 3 or the Internet 7.

[0045] The S22. provider's 4 maintenance man performs the access point of arbitration, and the updating request of protocol information to the server 9 of a service center 8.

[0046] In the server 9 of the S23. service center 8, the updating activity of access point information is done according to directions of a provider's 4 maintenance man.

[0047] As mentioned above, after access point information is changed by the provider 4 in the procedure of drawing 5 , when a user 1 carries out an Internet connectivity in the procedure of drawing 3 , a user 1 becomes possible [ carrying out an Internet connectivity for the updated access point information ] .

[0048] Under the present circumstances, a user 1 does not need to be conscious of whether access point information was updated. That is, an access point addition and a halt can be carried out, without carrying out an advance notification to a user 1.

[0049] Drawing 6 is basic structural drawing of the object for Internet connectivities by 1 operation gestalt of this invention, and the signal for access point information control. In this drawing, the signal 11 for Internet connectivities and the signal 12 for access point information control are divided roughly, and consist of signal classification 13 and signaling information 14.

[0050] The signal classification 13 of the signal 11 for Internet connectivities is AP information acquisition demand 15 and as a result of [ 16 ] AP information acquisition, and the signal 12 for access point information control is AP information-control demand 17 and as a result of [ 18 ] AP information control.

[0051] When the signal classification 13 is AP information acquisition demand 15, the provider identifier 19 is set as signaling information 14.

[0052] When the signal classification 13 is as a result of [ 16 ] AP information acquisition, the provider identifier 19, the AP telephone number 20, and protocol information 21 are set as signaling information 14.

[0053] When the signal classification 13 is AP information-control demand 17, the provider identifier 19, the control classification 22, the AP list 23, and protocol information 21 are set as signaling information 14.

[0054] When the signal classification 13 is as a result of [ 18 ] AP information control, the provider identifier 19, the processing result 24, the AP list 23, and protocol information 21 are set as signaling information 14.

[0055] In addition, the control classification 22 expresses any of read-out / registration / deletion they are, and AP shows an access point.



[0056] As mentioned above, automation of setting out of a user 1 is realized by adding AP information acquisition demand 15 and AP information acquisition result 16 which are a signal for Internet connectivities between a user 1 and a service center 8. Moreover, instant modification of the access point by the provider 4 is realized by adding AP information control demand 17 which is a signal for access point information control, and AP information control result 18 between a provider 4 and a service center 8.

[0057] Henceforth, drawing 7 - drawing 15 show the gestalt of still more detailed operation of this invention.

[0058] Drawing 7 is the block diagram of the personal computer in 1 operation gestalt of this invention, and a server (a service center/provider).

[0059] In this drawing, a monitor 25, a keyboard 26, an auxiliary storage unit 27, and a communication device 29 are connected to a central processing unit 28 by the system bus.

[0060] A monitor 25 displays on a screen the content directed from the central processing unit 28.

[0061] In case a keyboard 26 operates a personal computer 2 and servers 5 and 9, it receives the key input from a user 1, and inputs it into a central processing unit 28.

[0062] An auxiliary storage unit 27 performs the writing and read-out of data with the directions from a central processing unit 28.

[0063] A communication device 29 inputs into a central processing unit 28 the data which flow from the telephone line while it controls connection with the telephone line and sends out data on the telephone line with the directions from a central processing unit 28.

[0064] Drawing 8 is the processing sequence diagram of the Internet connectivity in 1 operation gestalt of this invention.

[0065] Henceforth, along with the sign of drawing 7 and drawing 8, the processing sequence of the Internet connectivity in 1 operation gestalt of this invention is explained.

[0066] If a user 1 starts software for Internet connectivities from a keyboard 26 in case he connects the Internet, the connection control section 31 will be started by I/O control unit 30 course.

[0067] If the connection control section 31 is started from a user 1, it will be displayed on a monitor 25 by I/O control unit 30 course at the Internet by making the input request of information required for connection into an initial entry input request, and will serve as information input waiting from a user 1. If an initial entry input request is displayed on a monitor 25, a user 1 will perform a \*\*\*\*\* information input from a keyboard 26, and applicable information will be notified for him to the connection control section 31 as an initial entry input by I/O control unit 30 course.

[0068] If the initial entry input from a user 1 is received, the connection control section 31 will give a data read-out demand to an auxiliary storage unit 27 by device control section 33 course, and will read the telephone number of a service center 8.

[0069] The connection control section 31 performs a connection request to a communication device 29 by device control section 33 course with the telephone number of the service center 8 read from the auxiliary storage unit 27.

[0070] If a communication device 29 receives a connection request, it will send to a public network 3 and a public network 3 will start connection with a service center 8. Communication device 29' of a service center 8 will perform a connection request to connection control-section 31' via device control section 33', if a connection request is received from a user 1. connection control-section 31' -- the check of a system resource etc. -- carrying out -- a connection result -- device control section 33' -- a course -- communication device 29' -- it returns. If communication device 29' has the normal connection result, the completion of arrival of the mail will be performed to a public network 3, and a public network 3 will make connection with a user 1 complete.

[0071] A user's 1 communication device 29 will return a connection result to the connection control section 31 by device control section 33 course, if a connection result is received. If the connection control section 31 which received the connection result has the normal connection result, it will give AP information acquisition demand 15 to the message transceiver section 32. If AP information acquisition demand 15 is received, the message transceiver section 32 will change an applicable demand into the signal 11 for Internet connectivities, and will give a signal sending-out demand to a communication device 29 by device control section 33 course.

[0072] A communication device 29 sends out an applicable signal to a public network 3, if a signal sending-out demand is received. Communication device 29' of a service center 8 will notify signal reception to message transceiver section 32' via device control section 33', if a signal is received from a public network 3. If advice of signal reception is received, message transceiver section 32' will analyze an applicable signal, and will notify it to connection control-section 31' as AP information acquisition demand 15. If AP information acquisition demand 15 is received, connection control-section 31' will perform AP data retrieval processing, and will return it to message transceiver section 32' by making a retrieval result into AP information acquisition result 16. If AP information acquisition result 16 is received, message transceiver section 32' will change an applicable result into the signal 11 for Internet connectivities, and will give a signal sending-out demand to communication device 29' via device control section 33'. Communication device 29' sends out an applicable signal to the telephone line, if a signal sending-out demand is received. A user's 1 communication device 29 will notify signal reception to the message transceiver section 32 by device control section 33 course, if a signal is received from a public network 3. If advice of signal reception is received, the message transceiver section 32 will analyze an applicable signal, and will notify it to the connection control section 31 as an AP information acquisition result 16. If AP information acquisition result 16 is received, the connection control section 31 will give a data write-in demand to an auxiliary storage unit 27 by device control section 33 course, and will

record an applicable result on an auxiliary storage unit 27. If preservation of AP information acquisition result 16 is completed, the connection control section 31 will use the access point within AP information acquisition result 16 received from the service center 8, and protocol information (refer to drawing 14 ), and will carry out an Internet connectivity in the procedure by the PPP (Point-to-Point Protocol) connection specified to advice RFC 1661.

[0073] AP data retrieval processing carried out below in a service center 8 is explained.

[0074] Drawing 9 is the data structure diagram of the access point information in 1 operation gestalt of this invention, and is constituted by the layered structure of a table A34, a table B35, and a table C36, D37, and E38.

[0075] Drawing 10 is the retrieval processing sequence diagram of the access point information in 1 operation gestalt of this invention.

[0076] Henceforth, along with the sign of drawing 9 and drawing 10 , the retrieval processing sequence of the access point information in 1 operation gestalt of this invention is explained.

[0077] The index of the S31. connection control section 31 is carried out in the provider identifier (refer to drawing 6 ) set up in AP information acquisition demand 15 to which the table A34 read from the auxiliary storage unit 27 was notified by the user 1, and it pinpoints the storing location of a table B35.

[0078] from an auxiliary storage unit 27, the S32. connection control section 31 carries out the index of the AP information on the table B35 which carried out reading appearance in the area code of the generation-of-electrical-energy watch (a user's 1 telephone number) the user 1 was informed from the public network 3 at the time of dispatch, and pinpoints the storing location of a table C36.

[0079] from an auxiliary storage unit 27, the S33. connection control section 31 searches AP detailed information of the table C36 which carried out reading appearance in the local office number of the generation-of-electrical-energy watch (a user's 1 telephone number) the user 1 was informed from the public network 3 at the time of dispatch, and pinpoints the storing location of a table D37.

[0080] When the S34. connection control section 31 reads a table D37 from an auxiliary storage unit 27, it searches the same local office number or the same nearby local office number as a user 1, and pinpoints the storing location of a table D37.

[0081] The S35. connection control section 31 computes the next AP detailed information area, when the same local office number as a user 1 is not coincidence or a nearby local office number.

[0082] The S36. connection control section 31 computes the head of AP number information area of the read table D37.

[0083] the load distribution of the table D37 which carried out reading appearance of the S37. connection control section 31 from the auxiliary storage unit 27 -- "-- it is -- " -- when having become, it progresses to S38, and when the load distribution of a table D37 "is nothing", AP

number stored in the maximum \*\*\*\* is taken out.

[0084] AP number from which the count of S38. reference serves as min is searched preferentially.

[0085] S39. -- AP number which offers the high-speed transmission speed is searched preferentially.

[0086] At each step of S38 and S39, the S40. connection control section 31 computes AP [ degree ] number information area, when a decision result is No.

[0087] The count of S41. reference is updated.

[0088] the S42. connection control section 31 generates AP number from the table E38 which carried out reading appearance, and generates the telephone number of an access point from the information on ejection and a table C36, D37, and E38.

[0089] S43. and also the connection control section 31 generate the protocol information of a response from a table 35.

[0090] Next, AP data maintenance processing carried out by the provider 4 is explained.

[0091] Drawing 11 is the maintenance processing sequence diagram (the 1) of the access point information in 1 operation gestalt of this invention.

[0092] If a provider's 4 maintenance man starts software for AP management from a keyboard 26 in case he updates AP data, the connection control section 31 will be started by I/O control unit 30 course. If started by the maintenance man, the connection control section 31 will give a data read-out demand to an auxiliary storage unit 27 by device control section 33 course in order to read AP data managed by the provider 4. If AP data are read, the connection control section 31 will be displayed on a monitor 25 by I/O control unit 30 course by making applicable data into AP information input request, and will serve as information input waiting from a maintenance man. If AP information input request is displayed on a monitor 25, as for a maintenance man, an information input more nearly required than a keyboard 26 will be performed, and applicable information is notified to the connection control section 31 as an AP information input by I/O control unit 30 course. If AP information input from a user 1 is received, the connection control section 31 will give a data read-out demand to an auxiliary storage unit 27 by device control section 33 course, and will read the telephone number of a service center 8. The connection control section 31 performs a connection request to a communication device 29 by device control section 33 course with the telephone number of the service center 8 read from the auxiliary storage unit 27. If a communication device 29 receives a connection request, it will send to a public network 3 and a public network 3 will start connection with a service center 8. Communication device 29' of a service center 8 will perform a connection request to connection control-section 31' via device control section 33', if a connection request is received from a provider 4. Connection control-section 31' checks a system resource etc., and returns a connection result to communication device 29' via device control section 33'. If communication device 29' has the

normal connection result, the completion of arrival of the mail will be performed to a public network 3, and a public network 3 will make connection with a provider 4 complete.

[0093] A provider's 4 communication device 29 will return a connection result to the connection control section 31 by device control section 33 course, if a connection result is received. If the connection control section 31 which received the connection result has the normal connection result, it will give AP information-control demand 17 to the message transceiver section 32. If AP information-control demand 17 is received, the message transceiver section 32 will change an applicable demand into the signal 12 for access point information control, and will give a signal sending-out demand to a communication device 29 by device control section 33 course. A communication device 29 sends out an applicable signal to the telephone line, if a signal sending-out demand is received. Communication device 29' of a service center 8 will notify signal reception to message transceiver section 32' via device control section 33', if a signal is received from a public network 3. If advice of signal reception is received, message transceiver section 32' will analyze an applicable signal, and will notify it to connection control-section 31' as AP information-control demand 17. If AP information-control demand 17 is received, connection control-section 31' will perform AP data update process, and will return it to message transceiver section 32' by making an updating result into AP information-control result 18. If AP information-control result 18 is received, message transceiver section 32' will change an applicable result into the signal 12 for access point information control, and will give a signal sending-out demand to communication device 29' via device control section 33'. Communication device 29' sends out an applicable signal to the telephone line, if a signal sending-out demand is received. A provider's 4 communication device 29 will notify signal reception to the message transceiver section 32 by device control section 33 course, if a signal is received from a public network 3. If advice of signal reception is received, the message transceiver section 32 will analyze an applicable signal, and will notify it to the connection control section 31 as an AP information-control result 18. If AP information-control result 18 is received, the connection control section 31 will give a data write-in demand to an auxiliary storage unit 27 by device control section 33 course, and will record an applicable result on an auxiliary storage unit 27. The connection control section 31 will display an updating completion message on a monitor 25 by I/O control unit 30 course, if preservation of AP information-control result 18 is completed.

[0094] Although the above-mentioned explanation is AP data update procedure by the provider 4, renewal of AP data can be carried out also in a service center 8, and explains the update procedure in a service center 8 below.

[0095] Drawing 12 is the maintenance processing sequence diagram (the 2) of the access point information in 1 operation gestalt of this invention.

[0096] If the maintenance man of a service center 8 starts software for AP management from

keyboard 26' in case he updates AP data, connection control-section 31' will be started via I/O control unit 30'. If started by the maintenance man, connection control-section 31' will give a data read-out demand to auxiliary storage unit 27' via device control section 33' in order to read AP data managed in the service center 8. If AP data are read, connection control-section 31' will be displayed on monitor 25' via I/O control unit 30' by making applicable data into AP information input request, and will become the information input waiting from a maintenance man. If AP information input request is displayed on monitor 25', as for a maintenance man, an information input more nearly required than keyboard 26' will be performed, and applicable information is notified to connection control-section 31' as an AP information input via I/O control unit 30'. Connection control-section 31' will perform AP data update process, if AP information input from a user 1 is received, and after an updating result is completed, it displays an updating completion message on monitor 25' via I/O control unit 30'.

[0097] AP data update process carried out below in a service center 8 is explained.

[0098] Drawing 13 is structural drawing (the 1) of the signal for access point information control in 1 operation gestalt of this invention. In this drawing, structural drawing of the AP list 23 shows the still more detailed DS of the AP list 23 set up in AP information-control demand 17 of the access point information-control signal 12 of drawing 6.

[0099] Drawing 14 is structural drawing (the 2) of the signal for access point information control in 1 operation gestalt of this invention. In this drawing, structural drawing of protocol information 21 shows the still more detailed DS of the protocol information 21 set up in AP information-control demand 17 of the access point information-control signal 12 of drawing 6.

[0100] Drawing 15 is the update process sequence diagram of the access point information in 1 operation gestalt of this invention.

[0101] Henceforth, along with the sign of drawing 13, drawing 14, and drawing 15, the update process sequence of the access point information in 1 operation gestalt of this invention is explained.

[0102] The index of the S51. connection control section 31 is carried out by the provider identifier 19 set up in AP information-control demand 17 to which the table A read from the auxiliary storage unit 27 was notified by the provider 4, and it pinpoints the storing location of Table B.

[0103] if the S52. connection control section 31 compares the protocol information of the table B which carried out reading appearance with the protocol information (refer to drawing 14) set up in AP information-control demand 17 and has a difference from an auxiliary storage unit 27, it will give a data write-in demand to an auxiliary storage unit 27 by device control section 33 course, and will update Table B.

[0104] Next, the connection control section 31 carries out the index of the read table B by the area code 41 (refer to drawing 13) within the S53. AP information 40 set up in AP

information-control demand 17, and pinpoints the storing location of Table C.

[0105] When the S54. area code 41 is new, the connection control section 31 performs the data write-in demand for generating Table C to an auxiliary storage unit 27 by device control section 33 course.

[0106] if the S55. connection control section 31 compares the table C (AP information) which carried out reading appearance with the AP information 40 (refer to drawing 13 ) set up in AP information-control demand 17 and has a difference from an auxiliary storage unit 27, it will give a data write-in demand to an auxiliary storage unit 27 by device control section 33 course, and will update Table C.

[0107] The S56. connection control section 31 computes the head of Table D by searching AP detailed information of the read table C by the local office number 45 (referring to drawing 13 ) in the AP detailed information 43 set up in AP information-control demand 17.

[0108] When the S57. local office number 45 is new, the connection control section 31 performs the data write-in demand for generating Table D to an auxiliary storage unit 27 by device control section 33 course.

[0109] The S58. connection control section 31 obtains whether the local office number of the table D read from the auxiliary storage unit 27 and the local office number 45 in AP detailed information were in agreement.

[0110] if the S59. connection control section 31 compares the load-distribution existence of the table D which carried out reading appearance with the load-distribution existence 44 (refer to drawing 13 ) in the AP detailed information 43 set up in AP information-control demand 17 and has a difference from an auxiliary storage unit 27, it will give a data write-in demand to an auxiliary storage unit 27 by device control section 33 course, and will update Table D.

[0111] The S60. connection control section 31 computes the head of Table E by searching it by the count of reference of the read table D.

[0112] When the S61.AP number 48 is new, the connection control section 31 performs the data write-in demand for generating Table E to an auxiliary storage unit 27 by device control section 33 course.

[0113] AP number information 47 (refer to drawing 13 ) in AP detailed information set up in S62. demand [ AP information-control ] 17 with AP number information on the table E which the connection control section 31 read next is compared.

[0114] AP number information has a difference at the step in front of S63. (S63), if renewal of Table E is needed, a data write-in demand will be given to an auxiliary storage unit 27 by device control section 33 course, and Table E will be updated.

[0115] The S64. connection control section 31 performs renewal of AP data, when only the registration number of the AP number 48 in AP information-control demand 17 repeats these processings.

[0116] The S65. connection control section 31 performs renewal of AP data, when only the registration number of the local office number 45 in AP information-control demand 17 repeats these processings.

[0117] The S66. connection control section 31 performs renewal of AP data, when only the registration number of the area code 41 in AP information-control demand 17 repeats these processings.

(Additional remark 1) In the Internet connectivity system connected to the Internet via the provider chosen as arbitration based on the demand from the personal computer connected to the public network The database which carries out unitary management of access point and protocol information of each provider stationed on a public network, The identifier of said means to connect between said databases with a personal computer, and the provider notified from said personal computer, and a means by which said database searches an applicable provider's access point and protocol information based on the dispatch telephone number of said personal computer, A means to notify said applicable provider's access point and protocol information to said personal computer, and said personal computer are an Internet connectivity system characterized by having a means to access the Internet using said access point and protocol information which were notified.

(Additional remark 2) It is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which sets up the identifier of the provider who connects from a personal computer, The 2nd step which connects with said database on a public network from said personal computer, The 3rd step which searches an applicable provider's access point and protocol information with said database with the dispatch telephone number of said provider identifier and said personal computer, The Internet connectivity approach characterized by consisting of the 4th step which notifies said retrieval result to said personal computer, and the 5th step which connects said advice to a carrier beam relevance provider.

(Additional remark 3) It is the Internet connectivity approach characterized by said 3rd step searching the cheapest and high-speed an access point and protocol information in the Internet connectivity approach of additional remark 2 publication according to a personal computer user's accommodated location.

(Additional remark 4) It is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which connects with said database via a public network from a provider, The Internet connectivity approach characterized by consisting of the 2nd step which performs the updating request of an access point and



protocol information at said database, and the 3rd step which performs renewal of said access point and protocol information in said database from said provider.

(Additional remark 5) It is the Internet connectivity approach which accesses the Internet using the database which carries out unitary management of the access point and protocol information for every provider chosen as arbitration based on the demand from the personal computer connected to the public network. The 1st step which starts the access point administrative software of said database from a keyboard with the server of a service center which holds said database, The 2nd step which performs the updating request of an access point and protocol information in said database in said service center, The Internet connectivity approach characterized by consisting of the 3rd step which performs renewal of said access point and protocol information in said database.

[0118]

[Effect of the Invention] As mentioned above, since-izing of the information which a user has to set as a personal computer (software for Internet connectivities) can be carried out [ minimum ] in an Internet connectivity according to this invention as explained to the detail, those who are not well versed in a communication link or a personal computer can also carry out an Internet connectivity easily. Moreover, instancy is possible for renewal of the access point by the provider, and protocol information, and the modification can make it reflected in a user's Internet connectivity instancy. In an Internet connectivity, the place of this invention which it becomes possible to raise the convenience of both network utilization and network employment, and contributes to the spread of the Internet and improvement in serviceability is larger than the above thing.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is Internet connectivity structure of a system drawing in 1 operation gestalt of this invention 1st.

[Drawing 2] It is the explanatory view of the Internet connectivity procedure in 1 operation gestalt of this invention 2nd.

[Drawing 3] It is the basic flow chart of drawing 2 .

[Drawing 4] It is the explanatory view of the provider maintenance procedure in 1 operation gestalt of this invention 3rd.

[Drawing 5] It is the basic flow chart of drawing 4 .

[Drawing 6] It is basic structural drawing of the signal in 1 operation gestalt of this invention.

[Drawing 7] It is the block diagram of the personal computer in 1 operation gestalt of this

invention, and a server (a service center/provider).

[Drawing 8] It is the processing sequence diagram of the Internet connectivity in 1 operation gestalt of this invention.

[Drawing 9] It is the data structure diagram of the access point information in 1 operation gestalt of this invention.

[Drawing 10] It is the retrieval processing sequence diagram of the access point information in 1 operation gestalt of this invention.

[Drawing 11] It is the maintenance processing sequence diagram (the 1) of the access point information in 1 operation gestalt of this invention.

[Drawing 12] It is the maintenance processing sequence diagram (the 2) of the access point information in 1 operation gestalt of this invention.

[Drawing 13] It is structural drawing (the 1) of the signal for access point information control in 1 operation gestalt of this invention.

[Drawing 14] It is structural drawing (the 2) of the signal for access point information control in 1 operation gestalt of this invention.

[Drawing 15] It is the update process sequence diagram of the access point information in 1 operation gestalt of this invention.

[Drawing 16] It is the explanatory view of the Internet connectivity procedure by the conventional technique.

[Drawing 17] It is the basic flow chart of drawing 16 .

[Description of Notations]

1 User

2 Personal Computer

3 Public Network

4 Provider

5 Server

6 Access Point to Provider

7 Internet

8 Service Center

9 Server

10 Access Point to Service Center

11 Signal for Internet Connectivities

12 Signal for Access Point Information Control

13 Signal Classification

14 Signaling Information

15 AP Information Acquisition Demand

16 AP Information Acquisition Result

17 AP Information-Control Demand

18 AP Information Control Result  
19 Provider Identifier  
20 AP Telephone Number  
21 Protocol Information  
22 Control Classification  
23 AP List  
24 Processing Result  
25 Monitor  
26 Keyboard  
27 Auxiliary Storage Unit  
28 Central Processing Unit  
29 Communication Device  
30 I/O Control Unit  
31 Connection Control Section  
32 Message Transceiver Section  
33 Device Control Section  
34 Table A  
35 Table B  
36 Table C  
37 Table D  
38 Table E  
39 Registration Number  
40 AP Information [0] - AP Information [N]  
41 Area Code  
42 46 Registration number  
43 AP Detailed Information [0] - AP Detailed Information [N]  
44 Load-Distribution Existence  
45 Local Office Number  
47 AP Number Information [0] - AP Number Information [N]  
48 AP Number  
49 Line Speed  
50 Server's Classification  
51 Detail Option  
52 Network Protocol  
53 Network Log On  
54 Software Compression  
55 Encryption Password  
56 NetBEIU

57 Transposition with IPX/SPX  
58 TCP/IP  
59 IP Address Existence  
60 IP Address  
61 Name Server Address Existence  
62 PRIMARY DNS  
63 Secondary DNS  
64 PRIMARY WINS  
65 Secondary WINS  
66 IP Header Compression  
67 Default Gateway Existence